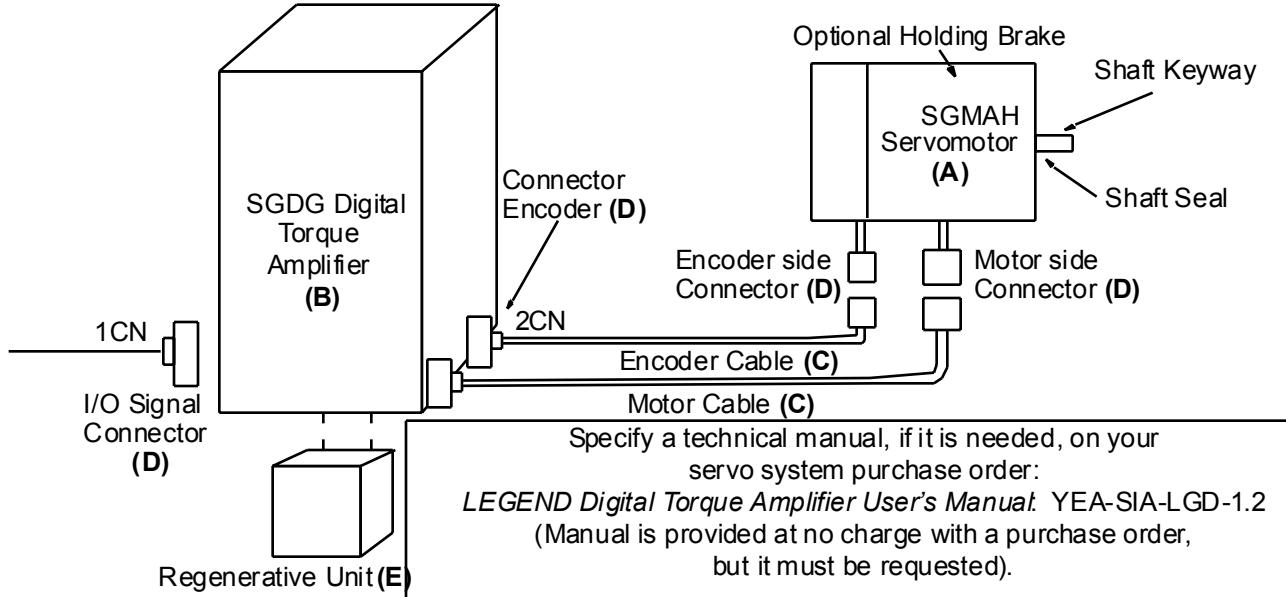


# Selecting Your SGMAH LEGEND System

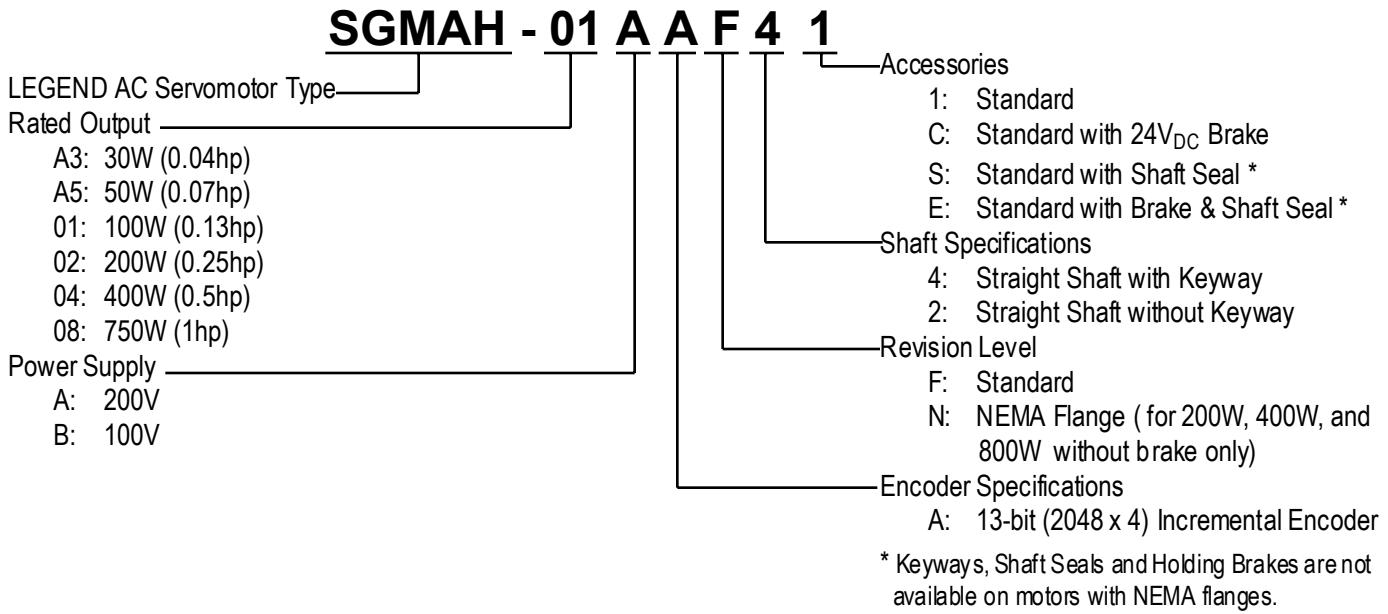
First, select the AC servomotor suited for your application using SigmaSize: the Yaskawa servomotor sizing software, available at no charge. (Request SigmaSize software via e-mail, at: [literature@yaskawa.com](mailto:literature@yaskawa.com)).

Use the diagram below to locate and identify the components of your system. Each item is letter-coded and cross-referenced in the option tables on the following pages.

## System Configuration



## Model Number Designation



## Servomotor &amp; Amplifier Selection

Use the table below to select the recommended SGMAH LEGEND AC servomotor and amplifier.

| Motors Used with 13-bit Incremental Encoders (5000rpm* Maximum) |                              |                               |   |                           | Amplifier                      |                  |                                    |
|---|------------------------------|-------------------------------|---|---------------------------|--------------------------------|------------------|------------------------------------|
| Description<br>System Voltage<br>Construction                   | Peak<br>Torque*<br>(oz • in) | Rated<br>Torque*<br>(oz • in) | Motor Inertia<br>(oz • in • s <sup>2</sup> × 10 <sup>-3</sup> ) | Motor<br>MODEL NUMBER (A) | Amplifier MODEL NUMBER<br>(B)* |                  | Motor &<br>Amplifier<br>Item Class |
|   |                              |                               |   |                           | Single-Phase<br>SGDG           | 3-Phase<br>SGDG- |                                    |
| 200V<br>Straight Shaft with-<br>out Keyway                      | 40.5                         | 13.5                          | 0.235   | SGMAH-A3AAF21             | 01GT                           | —                | Stock                              |
|   |                              |                               | 0.355   | SGMAH-A3AAF2C             |                                | —                |                                    |
|   | 67.7                         | 22.6                          | 0.312   | SGMAH-A5AAF21             |                                | —                |                                    |
|   |                              |                               | 0.432   | SGMAH-A5AAF2C             |                                | —                |                                    |
|   | 135                          | 45.1                          | 0.515   | SGMAH-01AAF21             |                                | —                |                                    |
|   |                              |                               | 0.635   | SGMAH-01AAF2C             |                                | —                |                                    |
|   |                              |                               | 0.515   | SGMAH-01AAF41             |                                | —                |                                    |
|   |                              |                               | 0.635   | SGMAH-01AAF4C             |                                | —                |                                    |
|   |                              |                               | 1.50  | SGMAH-02AAF41             | 04GT                           | —                | Stock                              |
| 200V<br>Straight Shaft with<br>Keyway                           | 270                          | 90.1                          | 2.321   | SGMAH-02AAF4C             |                                | —                |                                    |
|   |                              |                               | 2.45  | SGMAH-04AAF41             |                                | —                |                                    |
|   | 542                          | 181                           | 3.271   | SGMAH-04AAF4C             |                                | 10GT             |                                    |
|   |                              |                               | 9.52  | SGMAH-08AAF41             |                                | 10GT             |                                    |
|   | 1010                         | 338                           | 11.5  | SGMAH-08AAF4C             |                                | —                |                                    |
|   |                              |                               | 0.515   | SGMAH-01AAF21**           | 01GT                           | —                |                                    |
| 200V<br>Straight Shaft<br>without Keyway<br><b>NEMA Flange</b>  | 135                          | 45.1                          | 0.635   | SGMAH-01AAF2C**           |                                | —                |                                    |
|   |                              |                               | 1.50  | SGMAH-02AAN21***          |                                | —                |                                    |
|   | 270                          | 90.1                          | 2.45  | SGMAH-04AAN21***          | 04GT                           | —                |                                    |
|   |                              |                               | 9.52  | SGMAH-08AAN21****         |                                | 10GT             |                                    |
|   | 542                          | 181                           | —   | —                         |                                | —                |                                    |
| 100V<br>Straight Shaft<br>without Keyway                        | 40.5                         | 13.5                          | 0.235   | SGMAH-A3BAF21             | 01GT                           | —                | Stock                              |
|   |                              |                               | 0.355   | SGMAH-A3BAF2C             |                                | —                |                                    |
|   | 67.7                         | 22.6                          | 0.312   | SGMAH-A5BAF21             |                                | —                |                                    |
|   |                              |                               | 0.432   | SGMAH-A5BAF2C             |                                | —                |                                    |
|   | 135                          | 45.1                          | 0.515   | SGMAH-01BAF21             |                                | —                |                                    |
|   |                              |                               | 0.635   | SGMAH-01BAF2C             |                                | —                |                                    |
|   |                              |                               | 0.515   | SGMAH-01BAF41             |                                | —                |                                    |
|   |                              |                               | 0.635   | SGMAH-01BAF4C             |                                | —                | Stock                              |
|   |                              |                               | 1.50  | SGMAH-02BAF41             |                                | —                |                                    |
| 100V<br>Straight Shaft<br>with Keyway                           | 270                          | 90.1                          | 2.321   | SGMAH-02BAF4C             | 04GT                           | —                |                                    |
|   |                              |                               | —   | —                         |                                | —                |                                    |
|   | 135                          | 45.1                          | 0.515   | SGMAH-01BAF21**           |                                | —                | Stock                              |
|   |                              |                               | 0.635   | SGMAH-01BAF2C**           |                                | —                |                                    |
|   | 270                          | 90.1                          | 1.50  | SGMAH-02BAAN21***         |                                | —                | Stock                              |
| 100V<br>Straight Shaft<br>without Keyway<br><b>NEMA Flange</b>  | 135                          | 45.1                          | 1.50  | SGMAH-02BAAN21***         |                                | —                | Stock                              |
|   |                              |                               | —   | —                         |                                | —                |                                    |
|   | 270                          | 90.1                          | —   | —                         |                                | —                | Stock                              |

Notes: 24V<sub>DC</sub> brakes for SGMAH AC servomotors are standard. Contact a local source for 24V<sub>DC</sub> power supplies.

Motor power and encoder cables are factory pre-wired with approximately 13" lead length with amplifier mating connectors.

Use the tables on the following pages to specify mating connectors or pre-wired cables available in various lengths.

For technical information, request Yaskawa User's Manual number YEA-SIA-LGD-1.2.

\* Reference the previously listed speed/torque (force) curves for performance with the applied system voltage and phase(s).

\*\* Use NEMA 23 adapter flange (see peripheral device selection)

\*\*\* NEMA 23 flange and pilot (see SGMAH Dimension)

\*\*\*\* NEMA 34 flange and pilot (see SGMAH Dimension)

## Pre-wired Cable Selection

Use the table below to select pre-wired cables for your SGMAH AC servomotor.

| Cable Description (C)  | Motor Size (kW) | Part Number*     | Comments  | Item Class    |
|--|-----------------|------------------|---|---------------|
| Power Cable without Brake  | All             | JZSP-CMM00-□□(A) | These cables are available in five lengths. Use two digits in the part number's last place:<br>03: 3m<br>05: 5m<br>10: 10m (standard)<br>15: 15m<br>20: 20m | Stock**       |
| Power Cable with Brake   |                 | JZSP-CMM10-□□(A) |   |               |
| Shielded Power Cable without Brake***  |                 | BAHCE-□□(A)      |   | Limited Stock |
| Shielded Power Cable with Brake***   |                 | BAHBCE-□□(A)     |   |               |
| Encoder Cable  |                 | JZSP-CMP00-□□(A) | These cables are available in any length.<br><br>For example, to order one FR-RMCT-SB cable, 16m long, specify:<br>quantity: 16<br>part no.: FR-RMCT-SB     | Stock         |
| Encoder Cable (for applications up to 20m)<br>Only for Solder Connections                |                 | FR-RMCT-SB       |   |               |
| Encoder Cable (for applications from >20 to <50m maximum)<br>Only for Solder Connections |                 | UL20276-SB       |   |               |
| Input/Output 1CN Cable & Transition Terminal Block                                       |                 | JUSP-TA36P       | 35mm DIN rail mountable; the cable length is 0.5 meters.  |               |
| Input/Output 1CN Cable with Pigtail Leads  |                 | CKI-SGDG-□□      | Use the following key to specify required cable length (last digit of part number):<br>01: 1m (standard)<br>02: 2m<br>03: 3m                                |               |

\* The "A" at the end of the cable part number indicates the revision level. Revision level may be subject to change prior to this catalog reprinting.

\*\* Standard cable lengths are Stock items; non-standard cable lengths are Limited Stock items.

\*\*\* Use these power cables where it is important to meet CE (EMC) requirements.

## Connector Selection

Use the table below to select mating connectors or kits for your SGMAH AC servomotor.

| Connector Description (D)                    | Motor Size (kW) | Part Number | Comments  | Item Class    |
|--|-----------------|-------------|---|---------------|
| Motor Power Mating Connector (without Brake) | All             | JZSP-CMM9-1 | These connector kits include pin and socket. Requires use of Amp Crimp Tool (90548-1). (See below). | Stock         |
| Motor Power Mating Connector (with Brake)    |                 | JZSP-CMM9-2 |   |               |
| Amp Crimp Tool                               |                 | 90548-1     | Crimp tool for Motor Power Connector (JZSP-CMM9-□)  | Limited Stock |
| 2CN Amplifier Mating Connector               |                 | JZSP-CMP9-1 | —   | Stock         |
| Motor Encoder Mating Connector               |                 | JZSP-CMP9-2 | —   |               |
| 1CN Mating Connector                         |                 | DP9420007   | for SGDG I/O 36-pin   |               |

## Peripheral Device Selection

Use the table below to select peripheral devices for your SGMAH AC servomotor.

| Component Description (E)   |                                   | Part Number   | Comments   | Item Class |
|-----------------------------|-----------------------------------|---------------|--|------------|
| External Regenerative Unit* | 50Ω, 60W for 100 W and 400W amps. | JUSP-RG08D    | This is a general purpose regenerative unit.                                   | Stock      |
|                             | 25Ω 300W for 400W* and 1.5kW amps | RH500N25_ohmK | <b>Caution:</b> Proper setup is necessary to avoid equipment damage.           |            |
| NEMA Flange Adapter         |                                   | SGM-N23       | For 30, 50, and 100W SGMAH motors only. Complies to NEMA 23 mounting standard. |            |

Note Refer to the *LEGEND Digital Torque Amplifier User's Manual (YEA-SIA-LGD-1.2)* for proper resistor sizing guidelines.

\* For SGDG-04 applications requiring additional regenerative capacity beyond the JUSP-RG08D capacity, specify SGDG-04GTY22P and QTY 2 of RH500N25\_ohmK. Resistors must be used in series to provide 600W (before derating) of increased capacity.